



# Emergency Procedures

# Avoidance

- Good sailors know emergency procedures, are prepared to use them, and rarely have occasion to
- Most “investment” in emergency avoidance occurs before the lines get cast off
  - Training
  - Material condition
  - Planning

# Rousmaniers's Seven Factors (to avoid)

## *Annapolis Book of Seamanship*

- A rushed, ill considered Departure
- A dangerous Route
- Lack of Alternatives
- An unprepared Crew
- An unprepared Boat
- A crew that Panics
- Poor Leadership



# Approach to Casualty Action

- Know and Apply Immediate Actions to put ship and crew in a safe condition
- After executing the Immediate Actions, take time to evaluate the situation before acting further
  - Don't make it worse!!
- Call for help as indicated

# Sailing Emergencies

- Grounding
- Steering Failure
- Rigging Failure (Dismasting)
- Flooding
- Fire

# Grounding

- Prevention
  - Use multiple indications
    - Chart- soundings in ?
    - Fathometer
    - Buoyage
    - local knowledge- safety factor



# Grounding

- Prevention
  - Practice good navigation
    - Lookout, Helm and Navigator exchange information on all Nav aids
      - Checks with chart???
    - Use Danger Soundings
    - Fathometer alarm
    - Know the bottom

# Grounding

- Indications
  - Boat slows or stops
  - Bump the bottom
  - See the bottom
  - Fathometer alarm
  - Inability to steer
  - List



# Grounding- Immediate Actions

- Tack or turn in safe direction
- Back down if under power
- Deploy an anchor
- Consider starting the engine
- Consider dousing all sails
- Evaluate tidal effects
- Check for damage to steering, propulsion systems, and hull

# Grounding- Self Rescue

- Ensure that the boat is not flooding
- Kedge with anchor(s)
  - Use a life jacket or dinghy to “swim” an anchor into deeper water
  - Take the anchor line to a winch and apply a strain
- Back with Sails and/or Engine (consider water intake)

# Grounding- Self Rescue

- Wait for a high tide
  - Heel boat if possible such that rising tide is toward the keel not the rail!
  - Heel can be applied by taking a halyard some distance from the boat and pulling
  - Put fenders out to protect the hull if tide is falling
- Accept a tow



# Steering Failure

- Control Sails- Sheet or Douse as necessary
- Avoid gybe if possible
- Repair or Rig Alternate Steering Mechanism
  - Emergency Tiller to rudder post
  - Drag heavy object to one side
  - Jury-rigged rudder
  - Steer with Sails (not spinnaker)

# Rigging Failure- Immediate Actions

- Action is predicated upon an understanding of the direction of forces applied by standing rigging!
- Cast off sheets and put the broken stay to leeward
- Broken Shroud- Continue sailing upwind
  - Note that when sailing upwind only port or starboard shrouds will be under load

# Rigging Failure

- Broken Shroud (continued)
  - If a shroud breaks under load, TACK
  - If an unloaded shroud (leeward) is *found* to be broken DO NOT TACK
- Broken Headstay
  - Turn to a Downwind heading to take the pressure off of the headstay
  - Keep the headsail set, Rig inner forestay



# Rigging Failure-Immediate Actions

- Broken backstay
  - Turn upwind, but prepare for dismasting
  - Rig running backstays if possible
- Dismasting
  - Prevent mast from holing the boat
    - Mast will most likely be jack-knifed over the leeward rail

# Rigging Failure-Dismasting

- Dismasting
  - If possible keep the mast, sails, lines on board and remove sails and rigging as rapidly as possible
  - Make sure prop is clear and start engine
- Subsequent Recovery
  - Rig spare stays or halyard to replace broken gear- use a spar to augment mast stump.

# Severe Flooding

- When flooding is detected
  - Start all available pumps
  - Attempt to locate source of flooding and address
    - Soft wood DC plugs at each through-hull; canvas sheeting; cushions
  - Consider heeling the boat away from the hole to decrease flood rate



# Severe Flooding

- Consider using freshwater pumps and buckets to aid in dewatering
- Keep bilge clear of objects and material that may foul pumps

# Leaks

- Monitor status by strokes of bilge pump
- Investigate at first sign of problem
- Consider engine salt water system
- Close non-essential sea cocks
  - Check head intake
- Check stuffing box

# Sinking

- Step up into the life raft- usually safer to stay with boat if at all possible
- Enter on leeward side of vessel being abandoned
- If water splashing over rails probably going down, but continue to try to save it.
- Take water, flares, EPIRB in the raft-other emergency gear as possible



# Fire

- Sources of ignition exist on board. Most dangerous is propane
  - Bilge blower if leakage suspected and before starting engine
- Fight fire as appropriate until out; set reflash watch

# Fire Classes and Extinguishing Agents

- A- paper, wood (water)
- B- grease, oil (dry chemical- don't use water)
- C- Electrical (CO<sub>2</sub> if available- dry chemical will work but will ruin equipment)
- D- flares (get them over the side!)

# Engine Fires- Halon

- If engine shuts down without warning suspect a halon discharge
- Allow to cool before opening engine compartment



# Distress Signalling

- EPIRB- turn it on then leave it on
- Should operate for 48 hours
- Transmits a coded signal with your ship identification
  - Test first five minutes of every hour

# Distress Signalling

- Flares and Smokes
- Radio Signals
  - Mayday Mayday Mayday
  - Describe Situation
  - Describe boat important features
  - Repeat